Chapter 2

Digital Literacy and the Emergence of Technology-Based Curriculum Theories

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ABSTRACT

A shifting focus in education is resulting in more networked, technology-enhanced classrooms. Contemporary educators need to be aware of the skill sets students require to thrive in twenty-first century educational environments. This developmental and learner-centered approach, known as digital literacy, enables students to use technology to find, evaluate, organize, create, and communicate information. This chapter, therefore, proposes a theoretical framework for teaching digital literacy. The authors examine contemporary learning theories, including connectivism and chaos and complexity theories, in an effort to promote further discussion on the epistemological development of digital literacy. Taking into consideration advantages and barriers to promoting digital literacy in the classroom, the authors propose best practices for educators seeking to incorporate these competencies into their curricula.

INTRODUCTION

Due to the proliferation of information found and managed online, students of all ages and across all disciplines need to be able to find, evaluate, use, share, and create increasingly large sets of new knowledge in a digital environment. Educators are now confronted with not only developing curricula that focus on key learning components, but also with incorporating curricula that highlight the technological skill sets students need to be successful learners. In other words, “today’s students are no longer the people our education system was designed to teach” (Prensky, 2001, p. 1). From an epistemological perspective, these technologies are, or should be, as much a part of the curriculum...
as more traditional learning objectives. In addition
to the importance of information literacy during
the late 20th century, this is why digital literacy
is now receiving increased attention during the
beginning of our current century.

Digital literacy is often defined as the combina-
tion of technical, cognitive, and social skills. As
Gilster (1997) states, digital literacy is:

… the ability to understand and use information
in multiple formats from a wide range of sources
when it is presented via computers… It is a cogni-
tion of what you see on the computer screen when
you use the networked medium. It places demands
upon you that were always present, though less
visible, in the analog media of newspaper and
TV. At that same time, it conjures up a new set of
challenges that require you to approach networked
computers without preconceptions. Not only must
you acquire the skill of finding things, you must
also acquire the ability to use these things in your

Digitally literate students know how to use
computers and other technological devices, and
they are familiar with the internet and social media.
However, the parameters of digital literacy also
extend to higher level competencies in content
creation, data management, social collaboration
and communication, and a learner’s ethical and
social responsibilities in an online environment:
“[a] fundamental aspect is an appreciation of the
two-sided nature of the Internet, allowing the user
to interact, communicate, and publish, as well as
to access information” (Bawden, 2001, p. 246-247).
The classroom is the ideal place to focus on
these concepts, since students can experience and
improve their digital literacy skills while creating
objects that can be used for assessment purposes.
For example, students studying art history might
create a digital mashup, representing an artistic
period. Equally, students in any discipline can use
audio and video recording and editing tools to
create podcasts that they broadcast to their peers
across the world.

Digital literacy does not stand-alone; rather, it
fits into a framework with other 21st century skills
found in contemporary classrooms. Information,
socio-emotional, and photo-visual, among others,
are all literacies that make up the concept of digital
literacy (Eshet-Alkalai, 2004). Viewing digital
literacy in the framework of other, perhaps more
common, literacies can increase understanding of
the skills that should be incorporated into today’s
curricula.

All students, regardless of age or level of
education, are in a position to harness and focus
these skills, many of which they are already
somewhat familiar. Prensky (2001) calls these
students digital natives and warns “as a result of
this ubiquitous environment and the sheer vol-
ume of their interaction with it, today’s students
think and process information fundamentally
differently” (p. 1). The impetus then falls to the
educators to ensure these students are receiving
the necessary education to perform successfully
in the digital age. Digital literacy skills are es-
sential for students who will face information
overload during both their academic careers and
in their professional lives. Moreover, students
who enter the workforce will be expected to
exhibit familiarity with networked technologies
and proficient with digital tools. The purpose of
this chapter is to explore the concept of digital
literacy, to develop a theoretical framework for
incorporating digital literacy into curriculum
theories, to explore epistemological foundations
behind this theoretical framework, and to iden-
tify best practices for implementation in current
digital environments.